[2]*Research Center of Combined Traditional Chinese and Western Medicine, Affiliated Traditional Medicine Hospital, Sichuan Medical University, Luzhou, Sichuan, China*
[3]*Department of Nephrology, The Affiliated Traditional Chinese Medicine Hospital of Sichuan Medical University, Luzhou, Sichuan, China*

Objective: It has been reported that Helicobacter pylori infection is involved in the pathogenesis of IgA nephropathy (IgAN). However, the exact mechanism remains unclear. In this study, we set to investigate the impact of cytotoxin-associated antigen A (CagA), one of the major toxins in H. pylori, on the proliferation and extracellular matrix synthesis and secretion in cultured rat glomerular mesangial cells (RGMC).
Methods: The RGMC cells were cultured in medium containing CagA of different concentration (0, 1, 2, 4 μg/ml) for different time (24, 48, 72 hours) followed by proliferation assay by CCK8 and quantitative analysis of extracellular matrix secretion (Collagen I and III). The optimal combination of CagA concentration and treatment time was chosen to stimulate RGMC cells and expression of cell proliferation associated molecules (BAX, Bcl-2, PCNA) and intracellular collagen protein synthesis (Collagen I and III) were checked by RT-PCR, western blot and immunohistochemical staining.
Results: CagA stimulated proliferation of RGMC as well as Collagen I and III secretion in culture medium in a dosage and time-dependent way. Compared with the control, 4 μg/ml of CagA significantly promoted proliferation and Collagen I and III secretion as IL-1 (10 ng/ml). Furthermore, immunohistochemical staining showed increased PCNA expression in RGMC upon CagA stimulation. RT-PCR and western blot also validated the elevated mRNA and protein level of BAX, Bcl-2, Collagen I and III.
Conclusion: CagA directly promotes rat glomerular mesangial cell proliferation and extracellular matrix protein synthesis and secretion, indicating an underlying mechanism for H. pylori infection associated with kidney damage in IgAN.

http://dx.doi.org/10.1016/j.hkjn.2015.08.096

0128
Clinicopathological Features and Renal Outcome Analysis of IgA Nephrology Patients with Acute Kidney Injury

Z. L. Zhang, L. J. B. Li, Y. S. C. Yang, Z. Q. Zhou, C. W. Chen, Y. X. Q. Yu, Y. Q. Q. Yang
Department of Nephrology, The First Affiliated Hospital, Sun Yat-sen University, Guangzhou, China

Objective: We investigated the distinctive clinicopathological characteristics of Chinese IgA nephrology (IgAN) population with acute kidney injury (AKI) and tried to exam the association between AKI and renal outcome.
Methods: We performed a retrospective analysis of 1512 patients who were biopsy-proven IgAN in the period 2006 through 2011 in our center. AKI was defined as 2012 KDIGO (Kidney Diseases: Improving Global Outcomes) criteria, we divided patients into AKI group (n = 145) and non-AKI group (n = 1367) in cross-section analysis. There were 82 AKI and 906 non-AKI patients who had been regularly followed up until December 31, 2013. The primary composite endpoint was renal progression (including doubling of serum creatinine or end-stage renal disease or start of renal replacement therapy).
Results: The prevalence of AKI in our center was 9.59% (145/1512). The clinicopathologic features were much more severe in AKI group ($P < 0.05$). Acute tubulointerstitial nephritis (9.7%) was the most predominant intrinsic renal injuries in Chinese IgAN population with AKI instead of macroscopic hematuria related acute tubular injury/necrosis. In multivariate logistic regression analysis, we found that older age, male gender, malignant hypertension, pre-existing impaired kidney function, proteinuria, cellular crescent, fibrocellular crescent, glomerular sclerosis ≥ 50% were possible risk factors for AKI. The cumulative survival rates without renal progression at 1-year, 3-year, and 5-year was 98.0% versus 83.4%, 93.5% versus 64.0%, 88.2% versus 35.3% respectively between non-AKI and AKI group. A Cox proportional hazard model showed that pre-existing impaired kidney function [hazard ratio (HR) 2.577, 95% confidence interval (CI) 1.16 to 5.73; $P = 0.020$], glomerular sclerosis≥50% [HR 3.34, 95% CI 1.30 to 8.58; $P = 0.012$] might possible risk factors for renal outcome among IgAN patients with AKI.
Conclusion: AKI is commonly seen among IgAN population. We found that acute tubulointerstitial nephritis was the most predominant pathological change of intrinsic AKI. IgAN patients with AKI had significantly worse renal outcome.

http://dx.doi.org/10.1016/j.hkjn.2015.08.097

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Clinicopathological Characteristics and Relevant Factors in IgA Nephropathy Patients with Hypertensive Crisis

Minjing Liu[1,2], Yiping Ruan[1,2], Shanshan Zhou[1], Qian Zhou[3], Shicong Yang[4], Xueqing Yu[1,2], Qiongqiong Yang[1]
[1]*Department of Nephrology, The First Affiliated Hospital, Sun Yat-sen University, Guangzhou, China*
[2]*Key Laboratory of Nephrology, Ministry of Health, Guangzhou, China*
[3]*Epidemiology Research Unit, Clinical Research Center, The First Affiliated Hospital, Sun Yat-sen University, Guangzhou, China*
[4]*Department of Pathology, The First Affiliated Hospital, Sun Yat-sen University, Guangzhou, China*

Objective: To analyze the clinicopathological characteristics and relevant factors of IgA nephropathy (IgAN) patients with hypertensive crisis.
Methods: This is a single center, retrospective, cohort study. All the patients who were biopsy-proven primary IgAN in the period 2006 through 2011 in our center and presented with hypertension were enrolled in this study and were divided into two groups according to whether presenting hypertensive crisis. The clinicopathological features were compared and the associated factors of hypertensive crisis were evaluated by logistic regression.
Results: A total of 598 eligible IgAN patients with hypertension were enrolled in the study. The incidence of hypertensive crisis was 4.2% (n = 25). Male patients were 55.5% and mean age was 36.1 ± 11.2 years old in all patients, which showed no significantly different between the two groups. Patients with hypertensive crisis had lower eGFR (36.6 ± 30.0 mL/min/1.73 m2) and hemoglobin (115.5 ± 27.1 g/l) than patients without it (65.8 ± 43.1 mL/min/1.73 m2 and 125.6 ± 24.0 g/l respectively). Moreover, patients with hypertensive crisis exhibited higher proportions of CKD stage 5 (28.0%), abnormal glucose metabolism (24.0%), hyperuricemia (76.2%), tubular atrophy/interstitial fibrosis (88%), interstitial inflammation (60.0%), arteriolar wall thicken (80.0%) and capillary thrombosis (24.0%), 12.2%, 10.8%, 53.6%, 49.6%, 33.0%, 54.5% and 6.1% respectively in patients without hypertensive crisis. Impressively, the difference of proteinuria was not statistically significant. In addition, multivariate logistic regression indicated that abnormal glucose metabolism (OR = 2.517, p = 0.049), tubular atrophy/interstitial fibrosis (OR = 6.448, p = 0.021) and capillary thrombosis (OR = 7.266, p = 0.004) were independently associated with hypertensive crisis.
Conclusion: The incidence of hypertensive crisis was 4.2%. IgAN patients with hypertensive crisis had worse clinicopathological features. Abnormal glucose metabolism, tubular atrophy/interstitial fibrosis and capillary thrombosis were risk factors of hypertensive crisis in IgAN patients with hypertension.

http://dx.doi.org/10.1016/j.hkjn.2015.08.098

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Association of Clinicopathological Characteristics and Renal Function in Patients with IgA Nephropathy

R. R. Rong, Y. Q. Q. Yang, W. Q. Wen, H. N. Y. Huang, Z. Q. Zhou, Y. X. Q. Xyq
Department of Nephropathy, The First Affiliated Hospital of Sun-Yet Sen University, Guangzhou, China

Objective: We conducted a study to compare the clinicopathological features and to identify the potential factors associated with the renal outcome.
Methods: This was a retrospective cohort study, and a total of 1570 IgA patients were included. We evaluated the demographic, clinical and pathological characteristics of 1570 IgAN patients with different levels of kidney function. Unadjusted and adjusted logistic regression models were used to evaluate the association of clinicopathological characteristics and kidney function.
Results: Of the 1570 IgAN patients enrolled in this study, there were 1,146 patients with estimated glomerular filtration rate (eGFR) ≥ 60 mL/min/